



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/649,599

08/26/2003

Jack Y. Jau

021773-000310US

4963

20350

7590

06/10/2004

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

HUGHES, JAMES P

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,599

Applicant(s)

JAU ET AL.

Examiner

James P. Hughes

Art Unit

2881

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the application filed on Feb. 2, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 and 36-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 and 36-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>082603</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 13-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U. S. Patent No. 6,710,342.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both the patent and the instant application disclose a method and apparatus for scanning an electron beam at angles that are neither parallel, nor perpendicular, to the orientation of a specimen. Claim 1 of the '342 patent recites a method for scanning the surface of a specimen, using a scanning electron microscope comprising; generating a particle beam from a particle beam source; and scanning the surface of the specimen by deflection the particle beam at an angle with respect to the orientation of the surface features of the specimen such that the particle beam traverses an angle that is neither parallel nor perpendicular to the orientation of the surface features of the specimen. Claim 1 of the instant application recites the corresponding apparatus

Art Unit: 2881

to this method. It would have been obvious to one of ordinary skill in the art at the time of the invention to employ an apparatus to perform the method of the '342 patent because an apparatus is needed to perform this method. Claims 14-24 are similarly rejected because claims 2-12 of the '342 patent teach corresponding methods of the recited apparatus limitations of claims 14-24.

2. Claims 36-43 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 34 and 36 of U.S. Patent No. 6,392,231 in view of claims 13-23 of U.S. Patent No. 6,710,342. In general, claim 36 (in combination with its parent claim 34) of U.S. Patent No. 6,392,231 (hereinafter referred to as the '231 patent) claims the scanning electron microscope of claims 36 and 43 in the instant application; and claims 13-23 of U.S. Patent No. 6,710,342 (hereinafter referred to as the '342 patent) claims a method of scanning the surface of a semiconductor wafer using a scanning electron microscope recited in claims 36-43 of the instant application.

Claim 36 (in combination with its parent claim 34) of the '231 patent claims a scanning microscope for viewing a specimen comprising; a magnetic lens for generating a magnetic field in the vicinity of the specimen to focus the electrons of the electron beam source on the specimen, the magnetic lens having a central bore through which the particle beam travels; an electrode having a potential for providing a retarding field to the particle beam near and at the specimen to reduce the energy of the particle beam when the beam collides with the specimen, a deflection system including a plurality of deflection units situated along the beam axis for deflecting the particle beam to allow scanning of the specimen, at least one of the deflection

Art Unit: 2881

units located in the retarding field of the beam, the remainder of the deflection units located within the central bore of the magnetic lens. (See Col. 12, ll. 7-30)

However, the '231 patent claims do not teach the deflection system operative to scan the surface of the specimen by bending the particle beam at an angle relative to the orientation of the specimen, such that the particle beam traverses an angle that is not parallel or perpendicular to the orientation of the specimen; or the specific angles at which the particle beam may be scanned.

Claim 13 of the '342 patent claims a method of scanning the surface of a semiconductor wafer using a scanning electron microscope, the method comprising; scanning the surface of the specimen by deflecting the particle beam at an angle with respect to the die orientation of the semiconductor wafer such that the particle beam traverses an angle that is not parallel or perpendicular to the die orientation of the semiconductor wafer. (See e.g., Col. 7, ll. 10-25) Additionally, claim 14 of the '342 patent teaches the beam's response to an appropriate voltage potential (Col. 7, ll. 25-30) and claims 15-23 teach various scanning angles.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the apparatus of claims 34-36 of the '231 patent to perform the method of claims 13-23 of the '342 patent because the scanning method of the '342 method provides an efficient means for imaging a specimen – or semiconductor wafer.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Berkowitz (4,449,051) teaches a method for ion implantation dose control.
(Abstract)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P. Hughes whose telephone number is 571-272-2474. The examiner can normally be reached on Monday - Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James P. Hughes
Patent Examiner
Art Unit 2881

JPH

Nikita Wells
NIKITA WELLS
PRIMARY EXAMINER 06/07/04